



REPLICAST LIGHT

Lightweight Fast-Setting Tooling System

DESCRIPTION

REPLICAST Light is a lightweight fast-setting urethane casting system with good handling and cured properties. It was developed to provide a fast, economical casting system for a variety of applications. It has good compressive strength, so it works well as a lightweight, strong back-up material. It is readily machinable, so changes can be easily made. Lightweight holding and nesting fixtures are another logical use for this versatile material.

REPLICAST Light is provided as a three-component system to insure stable storage, and avoid potential problems with filler separation (floating), and subsequent redispersing that is necessary with filled two-component systems.

PRODUCT SPECIFICATIONS

	REPLICAST Light			ASTM Method
	Part A	Part B	Part C	
Color	Amber	Dark Amber	Off-White	Visual
Viscosity, centipoise	700 cps	50 cps	Free-flowing Powder Filler	D23932
Specific Gravity, gms./cc	1.00	1.12	Bulk Density .35 - .45 Gm/cc	D1475
Mix Ratio, By Weight By Volume	88 Part A : 100 Part B : 100 Part C 100 Part A : 100 Part B : 200 Part C			PTM&W
Pot Life, 4 fl. Oz. Mass @ 77°F	6 - 8 minutes			D2471

HANDLING and CURING

Two-component systems with lightweight fillers added will separate in storage after a very short time, with the lightweight fillers actually floating to the top of the storage container. Remixing these components is tedious and time consuming, and often results in an inconsistent mixture.

To avoid these problems, REPLICAST Light is provided as a three-component system, where the lightweight filler is added at the time of use. For the best results and highest physical properties, mix the three components by weight. For less critical applications, the components can be measured by volume - but still try to be as accurate as possible. In either case, the Part C lightweight filler is added to the Part B, and then "let down" with the Part A.

In three separate containers, measure out the required amount of all three components needed for the casting to be made. Make sure the Part B is in a container that will hold all of the components to be used. Start the mixing process by adding half of the Part C lightweight filler to the Part B container and mix until smooth, then add the remaining Part C and continue mixing. At this point, you will have a creamy, yet thick, somewhat pasty consistency material. Then slowly add the Part A component and mix it into the Part B and Part C combination. Very quickly, you will achieve a smooth, liquid viscosity material that will be very easy to pour. When the mixture is uniform, cast the material and allow to cure.

REPLICAST Light will gel quickly, and castings can be demolded rapidly. The demold time will depend upon casting size and thickness, and shop temperatures. At a 77°F ambient shop temperature, castings of 3" or more thickness can be demolded in around 30 minutes. Thinner castings may take longer, up to an hour. At this point, the casting can be used in non-critical applications. However, if maximum physical properties are required, the material should be allowed to cure longer.

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TYPICAL MECHANICAL PROPERTIES

		REPLICAST Light A/B/C	ASTM Method
Mix Ratio,	By Weight By Volume	88 Part A : 100 Part B : 100 Part C 100 Part A : 100 Part B : 200 Part C	PTM&W
Color		Light Gray to Grayish Brown	Visual
Mixed Viscosity, centipoise		3,750 cps	D2393
Working Time, 4 fl. Oz. Mass, @77°F		6 - 8 minutes	D2471
Cured Hardness, Shore D		73 Shore D	D2240
Shrinkage, inch/inch, Mold # 1, .053 Gallon Volume		0.0004 in./in.	D2566
Specific Gravity, grams, cc		.85	D1475
Density, lb./cu. Inch		0.0307	D792
Specific Volume, cu. in./lb.		32.6	D792
Tensile Strength, psi		2,540 psi	D638
Elongation at Break, %		3.6 %	
Tensile modulus		493,887 psi	
Flexural Strength, psi		5,430 psi	D790
Flexural modulus, psi		474,360 psi	
Compressive Strength, psi		5,608 psi	D695
Compressive Modulus, psi		252,505 psi	
Izod Impact Strength, Method A, Notched		0.21	D256
Glass Transition Temperature, Tg, DMA	E', Onset Peak	138°F 196°F	D4065

PACKAGING WEIGHTS

	Gallon Kit	Pail Kit
REPLICAST Light Part A	8 lb.	40 lb.
REPLICAST Light Part B	9 lb.	45 lb.
REPLICAST Light Part C	2 Gallons @ 4.5 lb. each	2 Pails @ 22.5 lb. each
Kit	26 lb.	130 lb.

SAFETY and HANDLING

PTM&W urethane products are made from raw materials carefully chosen to minimize or even eliminate toxic chemicals, and therefore offer the user high performance products with minimum hazard potential when properly used. Generally, the PTM&W urethane resins and hardeners will present no handling problems if users exercise care to protect the skin and eyes, and if good ventilation is provided in the work areas. However, breathing of mist or vapors may cause allergenic respiratory reaction, especially in highly sensitive individuals. As such, avoid contact with eyes and skin, and avoid breathing vapors. Wear protective rubber apron, clothing, nitrile rubber gloves, face shield or other items as required to prevent contact with the skin. In case of skin contact, immediately wash with soap and water, followed by a rinse of the area with vinegar, and then a further wash with soap and water. The vinegar will neutralize the hardener and lessen the chances of long term effects. Use goggles, a face shield, safety glasses or other items as required to prevent contact with the eyes. If material gets into the eyes, immediately flush with water for at least 15 minutes and call a physician. Generally, keep the work area as uncluttered and clean as possible, and clean up any minor spills immediately to prevent accidental skin contact at a later time. Keep tools clean and properly stored. Dispose of trash and empty containers properly. Do not use any of these types of products until Material Safety Data Sheets have been read and understood.

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